CLAIMS

We claim:

1. A catalytic converter for reducing pollutants in air or other fluids passing therethrough comprising:

a reticulated foam having internal voids, each void having a volume surrounded by a surface area, said voids, in total, providing a high internal void volume and a high internal surface area; and

a catalyst coating containing at least one transition metal on said internal surface area, thereby creating a catalyst coated reticulated foam.

2. A catalytic converter in accordance with claim 1 wherein said reticulated foam is constructed of a ceramic material.

3. A catalytic converted in accordance with claim 1 further including:

a fluid guide into which said catalyst coated reticulated foam is positioned, thereby guiding said fluids through said catalyst coated reticulated foam, and

a fan positioned in said fluid guide, said fan when activated, maintaining fluid flow through said calalyst coated reticulated foam.

4. A catalytic converter in accordance with claim 1 wherein said at least one transition metal is a combination of platinum and palladium.

5. A catalytic converter in accordance with claim 1 wherein said at least one transition metal is a combination of platinum and rhodium.

6. A catalytic converter in accordance with claim 1 wherein said at least one transition metal is platinum.

7. A catalytic converter in accordance with claim 1 wherein said catalyst coated reticulated foam is constructed to include an electrical heating element.

8. A catalytic converter in accordance with claim 7 further including:

an on-off switch coupled to said heating element; and

a thermostat coupled to said on-off switch.

9. A catalytic converter in accordance with claim 7 wherein said catalyst coated reticulated foam is constructed in first and second sections and said electrical heating element is positioned therebetween.

10. A catalytic converter in accordance with claim 7 wherein said heating element is a spiraled electrical element.

11. A catalytic converter in accordance with claim 7 wherein a geometrically shaped groove of predetermined depth is formed in at least one of said first and second sections and said electrical heating element is shaped to fit within said geometrically shaped groove.

12. A catalytic converter in accordance with claim 11 wherein said geometrically shaped groove is circular and said electrical heating element is constructed to form a circular helix.

13. A catalytic converter in accordance with claim 7 wherein said heating element is an electrical heater coated with catalytic material.

14. A catalytic converter in accordance with claim 7 wherein said heating element is an electrical heater woven through said catalytic coated reticulated foam.

15. A catalytic converter for reducing pollutants in air comprising:

a reticulated foam having internal voids, each void having a volume surrounded by a surface area, said voids, in total, providing a high internal void volume and a high internal surface area; and

a catalyst coated on said internal surface area, thereby creating a catalyst coated reticulated foam, said catalyst coated reticulated foam constructed and arranged for receiving energy from an external source.

16. A catalytic converter in accordance with claim 15 wherein said external source is a combustion process.

17 A catalytic converter in accordance with claim 16 wherein said catalyst coated reticulated foam is constructed and arranged for positioning in a path of emissions from said combustion process.

18. A catalytic converter in accordance with claim 16 wherein said catalyst coated reticulated foam is constructed and arranged for positioning at said combustion process source.

19. A catalytic converter in accordance with claim 15 wherein said external source is a radiating element.

20. A catalytic converter in accordance with claim 19 wherein said catalyst coated reticulated foam is constructed and arranged for positioning in a path of emissions from said radiating element.

21. A method for converting pollutants in a fluid such as air comprising the steps of:

providing a reticulated foam having external porous surfaces and internal voids, each void having a volume surrounded by a surface area, said voids, in total, having a high internal void volume and a high internal surface area;

coating said internal surface area with a catalyst comprising at least one transition metal, thereby providing a coated reticulated foam; and

positioning said coated reticulated foam in a flow path of said fluid.

22. A method for converting pollutants in accordance with claim 21 wherein said providing step includes the steps of:

determining fluid flow velocity;

utilizing said fluid flow velocity to select pore density in said reticulated foam in pores per linear unit.

23. A method for converting pollutants in accordance with claim 21 further including the step of embodying a thermostatically controlled electrical heating element in said reticulated foam.

24. A method for converting pollutants in accordance with claim 21 further including the steps of:

constructing said catalyst coated reticulated foam in first and second sections; and

locating an electrical heating element between said first and second sections.

25. A method for converting pollutants in accordance with claim 21 further including the step of providing energy to said to said catalyst coated reticulated foam from an external energy source.

26. A method for converting pollutants in accordance with claim 25 wherein said external energy source is a radiating element.

27. A method for converting pollutants in accordance with claim 21 further including the step of positioning said radiating element so that emissions therefrom illuminate said catalyst coated reticulated foam.